इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 1015 (2000): Leather Pump Buckets and Seat Valves Made from Vegetable Tanned Leather [CHD 17: Leather, Tanning Materials and Allied Products]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS 1015 : 2000

भारतीय मानक

वनस्पति से शोधित चमड़े से बनी पम्प बाल्टियाँ और सीट वाल्व — विशिष्टि

(दूसरा पुनरीक्षण)

Indian Standard

LEATHER PUMP BUCKETS AND SEAT VALVES MADE FROM VEGETABLE TANNED LEATHER—SPECIFICATION

(Second Revision)

ICS 140.35;23.060

© BIS 2000

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

October 2000

Price Group 4

AMENDMENT NO. 1 MAY 2002
TO
IS 1015 : 2000 LEATHER PUMP BUCKETS AND SEAT VALVES MADE FROM VEGETABLE TANNED LEATHER — SPECIFICTION

(Second Revision)

(*Page* 4, *clause* D-1, *line* 1) — Substitute 'water maintained at 75°C' *for* 'boiling water.'.

(CHD 17)

Reprography Unit, BIS, New Delhi, India

Leather Sectional Committee, CHD 17

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Leather Sectional Committee had been approved by the Chemical Division Council.

Increasing use of hydraulic appliances involving the use of oil and water pumps has necessitated the use of leather pump buckets to ensure the efficiency of such pumps. Vegetable tanned leather pump buckets are processed by currying the vegetable tanned hydraulic leather. The leathers are then moulded into shape by dipping into a bath of molten wax and then pressing the hot impregnated leather into the shape and form required. The seat valves are also treated with wax in the similar manner and then die-cut to the required shape and dimension.

This standard was originally published in 1956 and was subsequently revised in 1987 in view of technological developments. While undertaking the second revision of the standard, the Committee felt that seat valves are an integral part of the pump buckets and hence may be included in the same standard.

There is no ISO standard on the subject. This standard has been prepared based on indigenous manufacturers' data/practices prevalent in the field in India.

The composition of the technical committee responsible for formulating this standard is given at Annex F.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

LEATHER PUMP BUCKETS AND SEAT VALVES MADE FROM VEGETABLE TANNED LEATHER — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for leather pump buckets and seat valves made from vegetable tanned leather for use in water systems at normal temperature.

2 REFERENCES

The Indian Standards listed below contain provisions, which through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
581 : 1976	Vegetable tanned hydraulic leather (*second revision*)
582 : 1972	Method of chemical testing of leather (*first revision*)
1640 : 1960	Glossary of terms relating to hides, skins and leathers
5868 : 1983	Method of sampling for leather (*first revision*)
5914 : 1970	Methods of physical testing of leather

3 TERMINOLOGY

For the purpose of this standard the definitions given in IS 1640 shall apply.

4 REQUIREMENTS FOR RAW MATERIAL

The leather used in the manufacture of leather pump buckets and seat valves shall be vegetable tanned thick hides, butt or shoulder of buffalo or cow, free from growth marks, adulterants and other visible defects. In addition to this the leather shall also comply with the requirements prescribed in **4.1** to **4.4**.

4.1 The leather shall comply with the requirements prescribed in IS 581.

4.2 Area Stability in Water at 70°C

The leather shall not shrink more than 5 percent of the original area when tested according to the method prescribed under LP : 25 of IS 5914.

4.3 Cupping Test

The leather shall not loose shape or show any damage when tested according to the method prescribed in Annex A.

4.4 Cracking Test

The leather shall not show any sign of cracking when tested according to the method prescribed in Annex B.

5 REQUIREMENTS FOR LEATHER PUMP BUCKETS

5.1 Manufacture

The leather pump buckets shall be suitably moulded with the grain side in or grain side out as required by the purchaser and impregnated with suitable wax with melting point not less than 55°C. The leather pump buckets shall be subsequently machined to correct shape and dimension as agreed to between the purchaser and the supplier.

5.2 The leather pump buckets shall be uniform in substance, free from grit, hard spots and other visible defects. The buckets shall be of nominal thickness 4 mm or of any other thickness as agreed to between the purchaser and the supplier.

5.3 The leather pump buckets shall comply with the requirements prescribed in Table 1, when tested according to the methods prescribed under col 4 and 5 of Table 1.

5.4 Performance Test

The leather pump buckets shall not loose shape or show any damage when tested according to the method prescribed in Annex D.

Table 1 Requirements for Leather Pump Buckets

(*Clauses* 5.3 *and* E-1.3.2.3)

Sl No.	Characteristics	Requirements	Method of Test	
			Refer to Annex of This Standard	Refer to IS 582
(1)	(2)	(3)	(4)	(5)
i)	*p*H of water solubles, *Min*	3.3	–	LC:18
ii)	Differential number, *Max*	0.6	–	LC:18
iii)	Acid value of the extract fat, *Max*	4	C	–
iv)	Solvent extractable substances, percent by mass, *Min*	10	–	LC : 4

NOTE — The requirement at Sl No. (iv) shall be calculated on zero percent volatile matter basis.

6 REQUIREMENTS FOR SEAT VALVES

6.1 Dimensions

The seat valves shall be impregnated with suitable wax with melting point not less than 55°C and shall be die-cut to the shape as shown in Fig. 1. The dimensions and thickness of seat valves shall be as agreed to between the purchaser and the supplier. However, the following tolerances shall apply to the declared dimensions:

a) Thickness ± 0.5 mm
b) Outside diameter ± 1 mm

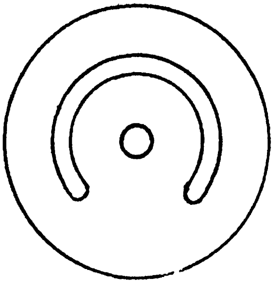


FIG. 1 SEAT VALVE

6.2 Performance Test

The seat valves shall not loose their shape or shall not show any visible dimension change when tested according to the method prescribed in Annex D.

7 PACKING AND MARKING

7.1 Packing

The leather pump buckets and seat valves shall be packed as agreed to between the purchaser and the supplier.

7.2 Marking

The packages shall be marked with the following details:

a) Name of the manufacturer and/or his recognized trade-mark, if any;
b) Number of leather pump buckets and seat valves in the package; and
c) Month and year of manufacture.

7.2.1 *BIS Certification Marking*

The leather pump buckets and seat valves may also be marked with the Standard Mark.

7.2.1.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and Rules and Regulations made thereunder. The details of conditions under which the licence for use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

8 SAMPLING AND CRITERIA FOR CONFORMITY

The scale of sampling and criteria for conformity shall be as prescribed in Annex E.

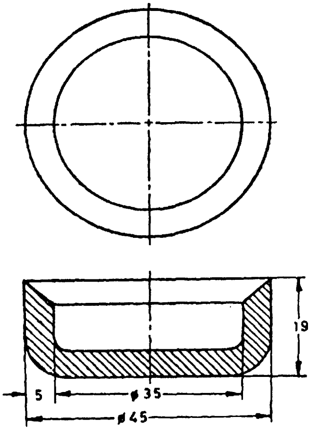
ANNEX A

(*Clause* 4.3)

METHODS OF TEST FOR CUPPING

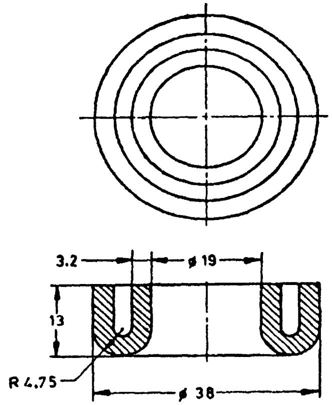
A-1 PROCEDURE

Press the leather sample, after the addition of suitable percentage of moisture and oil, with the grain side out into single and double cups of the shapes and sizes shown in Fig. 2 and Fig. 3, respectively. Remove the resultant cups from the presses and block when completely dry. The cups shall not loose their shapes and there shall not be any visible sign of injury to the leather.



All dimensions in millimetres.

FIG. 2 APPARATUS FOR SINGLE CUPPING TEST



All dimensions in millimetres.

FIG. 3 APPARATUS FOR DOUBLE CUPPING TEST

ANNEX B

(*Clause* 4.4)

METHODS OF TEST FOR CRACKING

B-1 PROCEDURE

B-1.1 Condition the sample prior to testing in an atmosphere of 65 ± 2 percent relative humidity and at a temperature 27 ± 2°C for 24 h.

B-1.1.1 Fold the test pieces flat with grain side outwards.

B-1.1.2 Refold the specimen so folded, at right angles to the original fold, through 180° round a bar of 12.7 mm. The specimen shall withstand the test without showing any sign of cracking.

ANNEX C

[*Table* 1, *Sl No.* (iii)]

DETERMINATION OF ACID VALUE OF THE EXTRACTED FAT

C-1 APPARATUS

C-1.1 Soxhlet Extractor

C-1.2 Air Oven

Suitable for heating the samples at 100 ± 2°C for about 5 h.

C-2 REAGENTS

All the reagents mentioned below are of laboratory reagent grade.

C-2.1 Petroleum Ether

Boiling point below 60°C.

C-2.2 Ethyl Alcohol

95 percent (by volume) or rectified spirit boiled and neutralized with sodium hydroxide solution to a faint pink colour, using phenolphthalein indicator.

C-2.3 Standard Sodium Hydroxide Solution

Approximately 5 N.

C-2.4 Phenolphthalein Indicator

One percent solution in 95 percent (by volume) ethyl alcohol or rectified spirit, neutral to phenolphthalein indicator.

C-3 PROCEDURE

C-3.1 Weigh accurately about 20 g of the prepared sample (*see* 4 of IS 5868). Place in the Soxhlet extractor with a weighed flask and pack it loosely in the thimble. Extract with petroleum ether for 4 h, siphoning every ten minutes, until free from oils and fats. Distil off the solvent completely. Dry the residue at 100 ± 2°C in a suitable oven for about 5 h till constant mass is obtained (*see* Note). Cool the flask and then weigh, note the mass of fat obtained. Add 20 to 30 ml of hot ethyl alcohol and titrate against standard sodium hydroxide solution using phenolphthalein as indicator until the pink colour persists for 30 seconds.

NOTE — In practice, it is not possible to obtain absolute constancy in the mass of fatty residues owing to volatility and chemical changes.

C-4 CALCULATION

$$\text{Acid value} = \frac{56.1 \times V \times N}{M}$$

where

V = volume, in ml, of standard sodium hydroxide solution;

N = normality of standard sodium hydroxide solution; and

M = mass, in g, of fat obtained after extraction with petroleum ether.

ANNEX D

(*Clauses* 5.4 *and* 6.2)

METHOD OF TEST FOR PERFORMANCE

D-1 PROCEDURE

Immerse the leather pump buckets in boiling water for a period of 10 minutes. Remove the buckets, cool and remove the excess water using a blotting paper. The buckets shall not loose their shape or have any visible damage.

ANNEX E

(*Clause* 8)

SAMPLING AND CRITERIA FOR CONFORMITY

E-1 SCALE OF SAMPLING

E-1.1 Lot

All leather pump buckets and seat valves in a single consignment and drawn from a single batch of manufacture shall constitute a lot. If the consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and the group of leather pump buckets in each shall constitute a separate lot.

E-1.2 Gross Sample

Samples shall be tested from each lot for ascertaining conformity of the buckets and seat valves in the lot to the requirements of the specification. Number of samples to be tested from a lot shall be in accordance with the col 1 and 2 of Table 2. These samples shall be drawn at random from the units in the lot.

E-1.3 Criteria of Acceptance

E-1.3.1 *Visual, Dimensional and Physical Characteristics*

All the samples drawn under **E-1.2** shall be tested for visual, dimensional and physical characteristics (except performance test) at the first instance. If the number of buckets/valves failing to satisfy the requirements for these characteristics is equal to or more than the number given in col 3 of Table 2, the lot shall be rejected as not conforming to the requirements for these characteristics.

Table 2 Number of Leather Pump Buckets and Seat Valves to be Selected for Sampling from Various Sizes of Lots

(*Clauses* E-1.2 *and* E-1.3.1)

Lot Size (1)	No. of Samples (2)	Rejection No. (3)
up to 25	5	1
26 to 100	15	2
101 to 300	30	3
301 to 500	40	4
501 to 800	55	4
801 to 1 300	75	5
1 301and over	115	7

E-1.3.2 *Chemical and Performance Test*

E-1.3.2.1 The lot satisfying the requirements of visual, dimensional and physical characteristics as determined under **E-1.3.1** shall be further tested for chemical analysis and performance test.

E-1.3.2.2 These samples for chemical and performance test shall be drawn from the samples already drawn (*see* **E-1.2**) in the ratio of one for every twenty samples or part thereof. These sub-samples for chemical and performance test shall be chosen at random and a composite sample shall be prepared for analysis (*see* **4** of IS 5868).

E-1.3.2.3 The lot shall be considered to have satisfied the requirements of chemical properties and performance capability, if the test result of the specimen taken from the prepared sample or the average of the test results of the specimens taken from the prepared sample satisfy the requirements given in Table 1 (*see* **5.3**).

E-1.3.2.4 A lot shall be accepted as conforming to the specification if it satisfies the requirements of visual, dimensional, physical and chemical properties and performance capability.

ANNEX F

(Foreword)

COMMITTEE COMPOSITION

Leather Sectional Committee, CHD 17

Chairman	*Representing*
Dr T Ramasami	Central Leather Research Institute, Chennai
Members	
Shri Anil Agarwal Shri M K Awasthi *(Alternate)*	Ministry of Defence (R & D) Defence Materials and Stores, Kanpur
Shri Shafeeque Ahmed Shri V P Naimur Rahman *(Alternate)*	Indian Finished Leather Manufacturers and Exporters Association, Chennai
Shri Swapan Kumar Basu	Department of Education, Government of West Bengal, Calcutta
Shri S K Basu	Development Commissioner, Small Scale Industries, New Delhi
Shri O P Behari Dr N R Mukhopadhyay *(Alternate)*	Directorate of Marketing and Inspection (Ministry of Agriculture), Faridabad
Shri S K Bhadra	Indian Leather Technologist Association, Calcutta
Director (Leather)	Khadi and Village Industries Commission, Mumbai
Shri P K Ghosh Shri N K Mazumdar *(Alternate)*	Bata India Ltd, Calcutta
Shri G Gupta Shri G C Kanaujiya *(Alternate)*	Ministry of Defence (DGI), DGQA, Kanpur
Shri O K Kaul Shri R Subhramaniam *(Alternate)*	Tata International Ltd, Dewas
Shri P D Mayee Shri S C Lahiry *(Alternate)*	Planning Commission, New Delhi
Shri P V Parvitikar	Footwear Design and Development Institute, Noida (U P)
Shri S Raja	The Leatherware, Bangalore
Representative	Council for Leather Exports, Chennai
Representative	Leather Research and Testing Laboratory, Directorate of Industries, Kanpur
Representative	National Institute of Fashion Technology, New Delhi
Shri A K Satwah Shri P Jayakumaran *(Alternate)*	Directorate General of Supplies and Disposals New Delhi
Shri Ajay Shankar Shri Sanjeev Gupta *(Alternate)*	Ministry of Defence (DGOF), Kanpur
Shri G M Sharif	All India Small Scale Tanners and Exporters' Association, Chennai
Shri M Srinivas Shri N M Aachariah *(Alternate)*	All India Skins and Hides Tanners and Merchants' Association, Chennai
Shri Lajinder Singh, Director (Chem)	Director General, BIS *(Ex-officio Member)*

Member-Secretary
Shri P Mukhopadhyay
Additional Director (Chem) BIS

(Continued on page 7)

(*Continued from page* 6)

Finished Leather Subcommittee, CHD 17 : 01

Convener	*Representing*
Dr D. H. Kamat	Central Leather Research Institute, Chennai
Members	
Shri T. Rafeque Ahmed	T. Abdul Wahib and Co, Chennai
Shri Shafeeque Ahmed Shri V. P. Naimur Rahman (*Alternate*)	Indian Finished Leather Manufacturers and Exporters Association, Chennai
Shri M. Ali Shri J. K. Mathur (*Alternate*)	Ministry of Defence (DGI), DGQA, Kanpur
Shri S. K. Basu	Development Commissioner, Small Scale Industries, New Delhi
Shri M. M. Hashim Shri T. Kutumba Rao (*Alternate*)	M. A. Khizar Hussain and Sons, Chennai
Joint CEO [Director (Leather)]	Khadi and Village Industries Commission, Mumbai
Shri O K Kaul Shri P. K. Mukherjee (*Alternate*)	Tata International Ltd, Dewas
Shri P K. Kundu Shri Amar Jha (*Alternate*)	Indian Leather Industries Association, Calcutta
Shri Radhey Lal Shri C. K. Duraivelan (*Alternate*)	Council for Leather Exports, Chennai
Shri R. Rajaraman	Central Leather Research Institute, Chennai
Shri M. Srinivas	All India Skins and Hides Tanners and Merchants' Association, Chennai

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc: No. CHD 17 (920).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi-110002
Telephones : 323 01 31, 323 3375, 323 9402

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices :		Telephone
Central	Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	323 7617 323 3841
Eastern	1/14 C.I.T. Scheme VII M, V.I.P. Road, Kankurgachi CALCUTTA 700054	337 8499 337 8561 337 8626, 337 9120
Northern	SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 3843 60 2025
Southern	C.I.T. Campus, IV Cross Road, CHENNAI 600113	235 0216, 235 0442 235 1519, 235 2315
Western	Mankalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	832 9295, 832 7858 832 7891, 832 7892

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM.

Printed at PRINTOGRAPH, New Delhi